

Appendix A. VOMRS Workflow

A.1 Status Transition Workflows

The workflows in this section assume that VO has established procedures that require representatives, site administrators, and LRPs to maintain members' authorization status, each for the appropriate phase, in the VOMRS system. The VOMRS software requires only the *Representative* phase to be maintained; the other two are optional.

A.1.1 Normal Registration Approval Process (with Full Rights)

1) Applicant obtains grid certificate

2) Applicant registers with VO

Status values:

| Membership | Authorization (<i>Rep- representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|---|---|-----------------------------------|
| New | New | New | New |

3) Representative is notified of new application, and approves applicant; applicant becomes member; member gets entered into VOMS database

Status values:

| Membership | Authorization (<i>Rep- representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|---|---|-----------------------------------|
| Approved | Approved | New | New |

4) Site administrator is notified when representative sets member's authorization status to "approved"; approves member for access to site resources

Status values:

| Membership | Authorization (<i>Rep- representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|---|---|-----------------------------------|
| Approved | Approved | Approved | New |

- 5) LRP is notified when representative sets member's authorization status to "approved"; LRP approves member for access to a particular resource

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Approved | Approved | Approved | Approved |

A.1.2 Registration Denial Process

- 1) Applicant obtains grid certificate

- 2) Applicant registers with VO

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| New | New | New | New |

- 3) Representative is notified of new application, and denies membership to applicant; applicant's record remains in VOMRS (do not confuse with VOMS)

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Denied | Denied | New | New |

- 4) It is up to the applicant and the representative to communicate about the reasons for the denial and to resolve them. Once the applicant is eligible for approval, the representative resets authorization status to approved and the VO administrator resets membership status to approved.

A.1.3 Revocation Process

Revocation is typically done by the user himself, e.g., as soon as he realizes his certificate has been compromised. Currently, when an individual's certificate is revoked, he or she cannot access the VOMRS web UI. VOMRS is not automatically notified. The VOMS proxy server will not be able to get a proxy, so any jobs the member submits will not run. Given this protection, the membership status of "revoked" in VOMRS does not strictly need to be set.

In the future it is planned to add functionality to VOMRS allowing it to capture information from the CRLs of its recognized CAs, and set individuals' membership status to "revoked" automatically.

1) Member has approved status (membership and authorization)

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Approved | Approved | Approved | Approved |

2) If member notifies VO administrator, the latter may revoke his or her membership status. Member is notified of revoked status.

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Revoked | Approved | Approved | Approved |

3) Representative is notified of revoked status and sets authorization status to denied. This removes the member's record from the VOMS database. Authorization is denied at this additional level for all grid resources.

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Revoked | Denied | Approved | Approved |

4) Site Administrator and LRP are notified of revoked status and they set authorization status to denied (optional).

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Revoked | Denied | Denied | Denied |

A.1.4 Suspension Process

1) Member has approved status (membership and authorization)

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Approved | Approved | Approved | Approved |

- 2) VO administrator suspends membership status. Member is notified of suspended status. It is up to the member and the VO administrator to communicate about the reasons for the suspension and to resolve them.

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Suspended | Approved | Approved | Approved |

- 3) Representative is notified of suspended status and sets authorization status to denied. This removes the member's record from the VOMS database. Authorization is denied for all grid resources.

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Suspended | Denied | Approved | Approved |

- 4) Site Administrator and LRP are notified of suspended status and they set authorization status to denied (optional).

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Suspended | Denied | Denied | Denied |

A.1.5 Re-approval After Revocation

- 1) Membership status is set to revoked and authorization status is set to denied. It is up to the member to reapply for a certificate, and provide the new DN and CA to the VO administrator.

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Revoked | Denied | Denied (optional) | Denied (optional) |

- 2) Upon receipt of new DN and CA for member, VO administrator resets membership status to approved. Member is notified of approved status.

Status values:

| Membership | Authorization (<i>Rep- representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|---|---|-----------------------------------|
| Approved | Denied | Denied (optional) | Denied (optional) |

- 3) VO administrator changes the member's primary DN to the new one so that member can once again access the VOMRS web UI.

- 4) Representative is notified of approved membership status, and resets authorization status to approved.

Status values:

| Membership | Authorization (<i>Rep- representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|---|---|-----------------------------------|
| Approved | Approved | Denied (optional) | Denied (optional) |

- 5) Site Administrator and LRP are notified of approved membership status, and reset authorization status to approved (optional).

Status values:

| Membership | Authorization (<i>Rep- representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|---|---|-----------------------------------|
| Approved | Approved | Approved | Approved |

A.1.6 Re-approval After Suspension

- 1) Membership status is set to suspended and authorization status is set to denied. The member must communicate with the VO administrator to resolve the reason for the suspension.

Status values:

| Membership | Authorization (<i>Rep- representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|---|---|-----------------------------------|
| Suspended | Denied | Denied (optional) | Denied (optional) |

- 2) Upon resolution of the problem, VO administrator resets membership status to approved. Member is notified of approved status.

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Approved | Denied | Denied (optional) | Denied (optional) |

- 3) Representative is notified of approved membership status, and resets authorization status to approved.

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Approved | Approved | Denied (optional) | Denied (optional) |

- 4) Site Administrator and LRP are notified of approved membership status, and reset authorization status to approved (optional).

Status values:

| Membership | Authorization (<i>Representative</i> phase) | Authorization (<i>SiteAdmin</i> phase) | Authorization (<i>LRP</i> phase) |
|------------|--|---|-----------------------------------|
| Approved | Approved | Approved | Approved |

A.2 Registration Workflow Diagram



